

PATENT CLAIMS

1. A silencer (25a) for the attenuation of noise occurring in an intake airstream (10, 27) of a gas turbine (1-3), characterized in that the silencer (25a) has means (31, 32, 33, 34) for the introduction of water and/or steam into the intake airstream (10, 27).
2. The silencer (25a) as claimed in claim 1, characterized in that the silencer (25a) is designed as a plurality of tubular elements (31) arranged essentially parallel to the direction of flow of the intake airstream (10, 27).
3. The silencer (25a) as claimed in claim 2, characterized in that cavities between the elements (31) are designed with a silencing action.
4. The silencer (25a) as claimed in one of claims 2 or 3, characterized in that water and/or steam is introduced into the intake airstream via nozzles (33), the nozzles (33) being arranged on the inside of the tubular elements (31), and injecting the water into the inner space, and preferably at least two nozzles (33) being present, distributed on the circumference, for each element (31).
5. The silencer (25a) as claimed in one of claims 2 to 4, characterized in that the tubular elements (31) have a variable diameter along their length, and, particularly preferably, they have a narrowing in the middle region, the narrowing particularly being designed in such a way that the elements (31) have essentially the same diameter on the inlet side and on the outlet side and have a diameter smaller by 20 to 30% in the middle region.

6. The silencer (25a) as claimed in claims 4 and 5, characterized in that the nozzles (33) are arranged in the region of the narrowing.

5 7. The silencer (25a) as claimed in one of claims 2 to 6, characterized in that at least two carrying walls (34) are arranged essentially perpendicularly to the direction of flow of the intake airstream (10, 27), between which walls the water (29) is supplied and into
10 which walls the tubular elements (31) are incorporated in a way whereby they pass through the walls (34).

8. The silencer (25a) as claimed in one of the preceding claims, characterized in that water with a
15 droplet size in the range of 10 to 50 μm is injected into the intake airstream (10, 27) via nozzles (33), the injected water quantity particularly preferably being dimensioned beyond the saturation limit.

20 9. A method for increasing the power output or regulating the power output of a gas turbine (1-3), using a silencer (25a) as claimed in one of claims 1 to 8.

25 10. The method as claimed in claim 9, characterized in that the silencer (25a) injects the water into the intake airstream (10, 11, 27) essentially directly upstream of a first compressor stage (1) and/or of a second compressor stage (2) and, if appropriate,
30 downstream of a further silencer (25) and, if appropriate, downstream or upstream of a further water spraying device (26).